Patent Claims:

1. An optical connector (1), in particular for establishing multimedia-connections in a vehicle according to the MOST-standard, comprising:

a connector housing (2) with a mating receptacle (10) for mating connection with a mating connector,

at least one optical fiber section (72, 74) with a front and a rear optical contact surface (82, 84),

at least one optical terminal element (12, 14) for mating connection with a mating optical terminal element of the mating connector,

wherein said optical terminal element (12, 14) includes at least one fiber receiving sleeve (32, 33), in which the optical fiber section (72, 74) is positioned in order to establish, with the front optical contact surface (82), an optical connection with an optical fiber of the mating connector,

wherein the optical fiber section (72, 74) is affixed in the fiber receiving sleeve (32, 33) by means of clamping elements (52a - 52d) and

wherein the fiber receiving sleeve (32, 33) has a front side (39) in the area of the front optical contact surface (82) of the optical fiber section (72, 74) and the clamping elements (52a-52d) are longitudinally spaced from the front side (39) of the fiber receiving sleeve (32, 33).

2. A connector (1) according to claim 1,
characterized in that, the front side (39) of the fiber receiving sleeve (32, 33), in the area of the front optical contact surface (82) of the optical fiber section (72, 74), forming a stop (38) for the mating terminal of the mating connector.

3. A connector (1) according to one of the preceding claims,
characterized in that, the fiber receiving sleeve (32, 33) defining a substantially cylindrical fiber channel (34, 37), the optical fiber section (72, 74) being affixed therein and the clamping elements (52a-52d) protruding from the interior circumference (60) of the fiber receiving sleeve (32, 33) radially inward into the fiber channel (34, 37).

4. A connector (1) according to one of the preceding claims, characterized in that, the clamping elements (52a-52d) being integrally formed with the fiber receiving sleeve (32, 33) in one piece.

5. A connector (1) according to one of the preceding claims, characterized in that, the clamping elements (52a-52d) reaching into the exterior circumference of the optical fiber section (72, 74) in a material displacing, compressing manner.

6. A connector (1) according to one of the preceding claims, characterized in that, the clamping elements (52a-52d) comprising a front face (68a-68d) adjacent to the front face (39) of the fiber receiving sleeve (32, 33) and he front face of the clamping elements being longitudinally spaced from the front face (39) of the fiber receiving sleeve (32, 33) towards the rear.

7. A connector (1) according to one of the preceding claims, characterized in that, the clamping elements (52a-52d) being offset relative to the front face (39) of the fiber receiving sleeve (32, 33) by more than 0 µm and less than 5 mm to the rear.

8. A connector (1) according to one of the preceding claims, characterized in that, the fiber receiving sleeve (32, 33) having a front guide section (42) and a rear insertion section (44) and the interior diameter (88) of the insertion section (44) being larger than the interior diameter (86) of the guide section (42).

9. A connector (1) according to claim (8), characterized in that, a chamfer (46) is provided between the guide section (42) and the insertion section (44).

10. A connector (1) according to one of the preceding claims, characterized in that, the fiber receiving sleeve (32, 33) having a front guide

section (42) and a rear insertion section (44) wherein the guide section (42) defining a guide for the fiber section (72, 74), wherein its interior diameter (86) being between 40 µm smaller and 120 µm larger than the exterior diameter of the optical fiber section (72, 74).

11. A connector (1) according to one of the preceding claims, characterized in that the fiber receiving sleeve (32, 33) having a front guide section (42) and a rear insertion section (44) and the optical fiber section (72, 74) having a radial clearance (90) of 40 µm to 100 µm in the insertion section (44).

12. A connector (1) according to one of the preceding claims, characterized in that, the fiber receiving sleeve (32, 33) having a front guide section (42) and a rear insertion section (44) with the clamping elements (52a-52d) located in the insertion section (44).

13. A connector (1) according to one of the preceding claims, characterized in that, the fiber receiving sleeve (32, 33) having a front guide section (42) and a rear insertion section (44) with clamping elements (52a-52d) longitudinally spaced from the rear end of the guide section (42) into the insertion section (44).

14. A connector (1) according to one of the preceding claims, characterized in that, at least two, three or more clamping elements (52a-52d) being located at the inner circumference (60) of the fiber channel (34, 37), evenly spaced along the circumference (60).

15. A connector (1) according to one of the preceding claims, characterized in that, the clamping elements (52a-52d) being provided as latching notches.

16. A connector (1) according to claim 15, characterized in that, the latching notches (52a-52d) having a substantially

triangular cross section in radial direction.

17. A connector (1) according to claims 15 or 16,
characterized in that, the latching notches (52a-52d) having a rearward tilted ramp surface (56a-56d) in order to press in the fiber section (72, 74) from the rear of the connector housing (2) and the latching notches having a front arresting area (68a-68d), substantially perpendicular to the optical axis (54) of the fiber section (72, 74), in order to interlock the fiber section.

18. A connector (1) according to one of the preceding claims
characterized in that, the latching notches (52a-52d) having a width along the inner circumference of the fiber receiving sleeve (32, 33) of 150 µm to 400 µm and a height of 50 µm to 200 µm protruding radially towards the inside.

19. A connector (1) according to one of the preceding claims
characterized in that, the connector (1) comprising at least one electro-optical converter (102, 104) comprising an optical input / output, wherein the converter is located at the rear end of the fiber channel and an optical connection between the fiber section and the converter is provided through the rear optical contact surface (84) of the fiber section (72, 74).

20. A connector (1) according to claim 19
Characterized in that, the electro-optical converter (102, 104) being mounted directly to the rear of the connector housing (2) with a bracket (108).

21. A connector (1) according to one of the preceding claims
characterized in that, the bracket (108) being stamped from metal, substantially U-shaped and interlocked on the side surfaces (18, 20) of the connector housing (2) and provided with soldering pins (110) for connecting with a printed circuit board.

22. A connector (1) according to one of the preceding claims
characterized in that, the bracket (108) having at least one elastic spring section

(112, 114), pressing the converter (102, 104) forward towards the rear optical contact surface (84) of the fiber section (72, 74) when assembled.

23. A connector (1) according to one of the preceding claims characterized in that, the bracket (108) having a rear wall and an upper cover, integrally connected along the rear upper edge in one piece, wherein the spring elastic section (112, 114) is attached to the upper cover and the spring elastic section has a substantially L-shaped cross section.

24. A method for manufacturing an optical connector (1) for plastic fibers, in particular for manufacturing a multimedia-connector for a vehicle according to the MOST-standard according to one of the preceding claims, comprising the steps:

providing a connector housing (2) with a mating receptacle for mating connection with a mating connector, wherein the connector (1) has at least two optical terminal elements (12, 14), for mating connection with mating optical terminal elements of the mating connector and wherein each of the terminal elements (12, 14) has a fiber receiving sleeve (32, 33), each with a plurality of inner clamping elements (52a - 52d),

providing at least two optical fiber sections (72, 74) each with a front and a rear optical contacting surface (82, 84),

thereafter pressing the fiber sections (72, 74) directly into the associated fiber receiving sleeves (32, 33), wherein the fiber sections (72, 74) are fixed by means of the clamping elements (52 - 52d) in the fiber receiving sleeves (32, 33), wherein an optical connection can be established with an optical fiber of the mating connector through the front optical contacting surfaces (82) of the optical fiber sections (72, 74) when the connector (1) is mated with the mating connector,

thereafter positioning two electro-optical converters (102, 104) at a rear side (48) of the associated fiber receiving sleeve (32, 33), whereby an optical connection between the fiber sections (72, 74) and the converters (102, 104) is established through the rear optical contacting surfaces (84) of the fiber sections (72, 74) and

affixing the converters (102, 104) to the connector (1).

25. Method according to claim 24,
characterized in that, the fiber receiving sleeves (32, 33) each comprising a front stop surface (38) in the area of the front optical contact surfaces (82) of the optical fiber sections (72, 74), wherein a mounting die is being pressed against each of the front stop surfaces (38) in order to form a front stop for the associated fiber section (72, 74) during pressing in.